

# Introducing the Aircraft Dispatcher

## History, Roles, Responsibilities & Tools

### NASA Ames Presentation

January 23, 2002

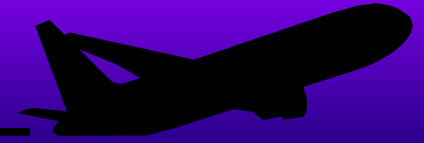
Mr. Steve Caisse

Flight Superintendent

Delta Air Lines



# *Dispatchers and Arachnologists*



● What do these two professions have in common?

- Arachnology – The Study of Mites and Ticks

● The World's Least known Professions?

- 1500 Active Aircraft Dispatchers

- 3000 Active Arachnologists

# Quotes About Dispatch



- "Dispatcher's are the heart of the Airline".
  - Mr. Herb Kelleher, Chairman of the Board-Southwest
- "Dispatchers should be Standard Operating Procedure at all Airlines."
  - Congressman James Oberstar
- "Dispatch! Isn't that the difference? Part 121 has it & 135 doesn't. Why don't we require Dispatchers for all Operations?"
  - Transportation Secretary, Norman Y Mineta
- "The aircraft dispatcher is a vital component in the triad of safety..."
  - Hal Moses, Former RTCA Director
- "Dispatch has been proven a critical link in aviation safety".
  - Ms. Katherine Hakala, FAA
- "Dispatchers have the ability to shortstop the accident trend and rewrite the Aviation Accident story and are the unsung hero's of the aviation community".
  - Mr. Harold Johnson, FAA



# History



## ● The Early Years Of Aviation

- No Preplanned Flight Plans
- Little Weather Information
- Years Of Increasing Accidents
  - Senator Cutting Accident
  - Carole Lombard Accident

## ● 1938 - U.S. Congress passed the Civil Aeronautics Act

- Regulations to ensure that all air carriers operated in as safe a manner as possible.
- This act created an operational control structure consisting of a system of checks and balances.
- One result of this regulatory action was the creation of a new Airman Certificate - The Aircraft Dispatcher.



# *Dispatcher's Responsibility*



## ■ FAR 121.533

### **Responsibility for operational control: Domestic operations.**

- (a) Each certificate holder conducting domestic operations is responsible for operational control.
- (b) The pilot in command and the aircraft dispatcher are jointly responsible for the preflight planning, delay, and dispatch release of a flight in compliance with this chapter and operations specifications.
- (c) The aircraft dispatcher is responsible for--**
  - (1) Monitoring the progress of each flight;**
  - (2) Issuing necessary information for the safety of the flight; and**
  - (3) Canceling or redispersing a flight if, in his opinion or the opinion of the pilot in command, the flight cannot operate or continue to operate safely as planned or released.**

# *Continuing Flight*



## ● **FAR 121.627 Continuing flight in *unsafe* conditions.**

- (a) No pilot in command may allow a flight to continue toward any airport to which it has been dispatched or released if, in the opinion of the pilot in command **or dispatcher**, the flight cannot be completed safely; unless, in the opinion of the pilot in command, there is no safer procedure.

In that event, continuation toward that airport is an emergency situation as set forth in the FAR's.

# *Liability*



- The Captain and Dispatcher of record are both legally responsible for the safe operation of the flight.
- Either, or both may be fined, and/or have their certificate suspended, or revoked by the FAA for operating unsafely.
- Either, or both are subject to Civil Suit and/or Criminal Prosecution for operating unsafely, endangering the lives or welfare of passengers or crew.
- In the interest of providing the highest, conservative level of Safety, airline management must support either party's decision to terminate any flight if either party feels it is unsafe to continue.

# *Training Requirements*



## **Appendix A to Part 65--Aircraft Dispatcher Courses**

- **Partial list of items required to be covered in dispatcher training as set forth in Part 65 Appendix A**
  - Weather Hazards; Icing, TRW's, Turbulence, Mountain Wave, Windshear, Crosswinds, Tornadoes, Restrictions to Visibility, Contaminated Runways,
  - ATC System, Restrictions, NOTAMS
  - Aircraft Systems, Performance, Minimum Equipment List, Weight and Balance
  - Emergency and Abnormal Procedures
  - Security Procedures on Ground and in Air



# *Training – Conceptual Issues*



- Decision to Operate the Flight
- Authorize flight departure with concurrence of Pilot in Command
- *Operational Control*
- Security Considerations
- Responsibility and Means of Declaring Emergencies, Required Reporting of Emergencies
- Situational Assessment – Change to the plan.

# Day To Day Operations



1. Safety
2. Passenger Comfort
3. Public Relations
4. Schedule
5. Economy

--- IN RESPONSE TO ---

- Weather
- Air Traffic
- Airport Conditions
- Mechanical Problems



# *A Representative Major's Dispatch Team*



- 200 Full Performance Dispatchers

- 12 Assistant  
Dispatchers

- 20 Sector Managers

- 15 Meteorologists

- Upper Air

- Surface



# *Typical Dispatcher Profile*



- Diverse Experience in Multiple Previous Assignments in a Wide Variety of Roles
- 25 Years or More of Company Seniority
- Supervisory Experience
- Calm-relaxed
- Self Starter
- Discerning
- Analytical
- Motivated
- Articulate





# *Typical Dispatcher Experience Levels*



- Average Dispatch Experience 17 Years

- Average Company Seniority 28 Years

- Background Career

Experience in various

Positions:

- Operations

- Passenger Service

- Load Planning

- Fueling



# *Dispatcher Responsibilities*



- Issue flight plan/dispatch release in accordance with FAR's and company policies for each flight segment and ensure that when conditions set forth in the Flight Plan/Dispatch Release cannot be met, or changed for any reason, the flight is held, diverted, rerouted, redispached or canceled in the interest of safety and/or efficiency.
- Ensure that all aspects of each operation authorized meet the criteria set forth in applicable FAR's and the airline's Operations Specifications.
- Provide the pilot in command with information necessary for the safe conduct of each flight. This includes advising the crew on an ongoing basis of changes in enroute, terminal and alternate weather conditions, field conditions and any other conditions affecting the safety of the flight.
- Arrange and coordinate emergency medical attention as needed for crew and passengers.



# *Dispatcher Responsibilities*



- Obtain a weather briefing and keep abreast of weather changes upon reporting for duty (e.g. surface, upper air, etc.)
- Build routes on an as-needed basis when efficient and/or safe route does not exist.
- Provide Flight Movement Forecast (FMF) when required.
- Perform annual equipment qualification as required by FARs.
- Maintain communication with flights over which authority is exercised.



# *Dispatcher Responsibilities*



- Exercise and maintain joint responsibility with the pilot in command for operational control in all matters affecting the safety of flights.
- Perform flight following requirements as specified in FARs, issue flight advisory messages (FAM's), keeping crews and stations informed of any changes in the status of all flights such as early departure authorizations, anticipated delays, cancellations, diversions, unscheduled landings, re-routings, changes and /or substitutions of equipment (usually flight-specific) either by type or series, or any other schedule irregularities resulting from either the Dispatcher or from a joint pilot-dispatcher decision(s) whether done prior to flight's departure or during enroute operations.

# *Dispatcher Responsibilities*



- Advise and coordinate all aspects of the daily with other Flight Control, Meteorology, Crew Reroute, Equipment Control, Maintenance, Airport Customer Service, and other departments' personnel as required under all circumstances.
- Provide for any offscheduled operations passenger requirements as necessary.
- Assure availability, qualifications and suitability of crew and appropriate aircraft for each scheduled departure.
- Verify accuracy and applicability of weight and balance documents.





# *Dispatcher Responsibilities*



- Obtain from the Dispatcher being relieved, and provide to the relieving Dispatcher, a complete briefing on all aspects of the current sector operation with emphasis on irregular circumstances upon reporting for duty. Upon receipt of turnover briefing, scrutinize previous shift's flight planning criteria with emphasis on alternate selection, hold fuel and routings.
- Investigate suspected discrepancies and ensure corrective action is taken before a flight is initiated or continued.
- Coordinate response to security threats to flights.



# *Dispatcher Responsibilities*



- Continuously review weather, airport and navaid conditions within the effective sector(s) and Notices to Airmen (NOTAMs) which may impact the operation and act as appropriate in response to these factors.
- Apply Minimum Equipment List (MEL) and Configuration Deviation List (CDL) performance corrections and/or limitations.
- Adjust maximum authorized loads for aircraft for routes & airports to be used as conditions indicate.



# Operations Control Centers



- Secure Bunker
- “Manage the Airline”
- Team Concepts
- State of the Art Tools
- Sophisticated Communications
- Co-location of all Operating Disciplines



# AOC Objectives



- Accurate and Timely Information Dissemination
- Improved Management of Irregular Operations
- Efficient Utilization of Carrier's Resources
- Streamlined Communication
- Standards of Performance
- Continuous Learning
- Reliability through Redundancy
- Security
- Safety



# Automation Tools



## ● Integrated Management Tools (IMT)

- Provides Dispatcher with Operational Information

## ● Flight Planning Computer

- Recommends  
Flight Routes and Altitudes

## ● Graphical Flight Following

- Shows actual position of  
all flights



# *Automation Tools*



## ● Weather Information Displays

- Provides RADAR, Satellite and other vital Meteorological Information

## ● Worldwide Phone System

- Provides one-touch calling to Worldwide Phone Numbers

## ● Online Computer Access

- Full access to informational sources available on the Internet.
- Company Intranet Access
  - Company manuals, documents and operational data

# *The Dispatcher's Teammates*



- **Airline Air Traffic Control Coordinator**
- **Meteorologist (Surface, Upper Air)**
- **Aircraft Coordinator**
- **Airport Customer Service Coordinator**
- **System Reroute Crews Coordinator**
- **Maintenance Coordinator**
- **Technical Analyst - Maintenance**
- **In-Flight Service Representative**
- **Flight Operations Representative**
- **Navigation Database Analyst**
- **Reservations Coordinator**
- **Corporate Security**
- **Air Cargo Specialist**
- **Automation Support**

**PLUS**

- ATCSCC Strategic Planning Team
- Traffic Management Officers





# Decision Making



- Flight on ground - Captain and Dispatcher both agree - flight operates as planned
- Flight on ground - Either party disagrees with plan - flight remains on ground
- In-Flight - Captain wants to Stop / Divert - Flight Lands
- In-Flight - Dispatcher wants to Stop / Divert - Flight Lands
- If Captain and Dispatcher cannot agree when Dispatcher directs flight to stop/ divert if in his/her opinion it is unsafe to continue, and Captain feels there is no safer procedure than to continue, it is an emergency.
- All notifications and reports required due to an emergency also exist for the exercise of Emergency Authority.

# *Dispatch Related Hazards To Flight*



- Thunderstorms
- Clear Air Turbulence
- Unsafe Airport Conditions
- Adverse Low Level Wind Conditions
- Low Ceilings / Visibility
- Icing



# *Examples of Potential Emergencies*

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- Crew Incapacitation; Fatigue, Illness
- Enroute Fuel Leak
- Passenger Concerns Over Apparent Leaks, Noises, Etc.
- Passenger Medical Problems
- Intoxicated, Unruly Passengers
- Prisoners, Passenger Threats, Security
- Thunderstorm Penetration / Avoidance
- Turbulence Penetration / Avoidance
- Icing Penetration / Avoidance
- Equipment Failures - Aircraft in an Non-airworthy Condition
- Non Availability of Enroute Emergency Airport
- Low Fuel for Intended Operation
- Field Conditions



# *Dispatch Release*



## **FAR 121.663 Responsibility for dispatch release: Domestic and flag operations.**

-  Each certificate holder conducting domestic or flag operations shall prepare a dispatch release for each flight between specified points, based on information furnished by an authorized aircraft dispatcher.

The pilot in command and an authorized aircraft dispatcher shall sign the release only if they both believe that the flight can be made with safety.



# *Dispatcher Task Analysis*



- The Dispatcher performs multiple tasks in pre-flight planning required to produce one dispatch release.
  - These tasks can be broken down into 13 separate primary functions.
  - These primary functions can be subdivided into 104 additional sub tasks.\*

\* Source: Al Kratuer – Northwest Airlines

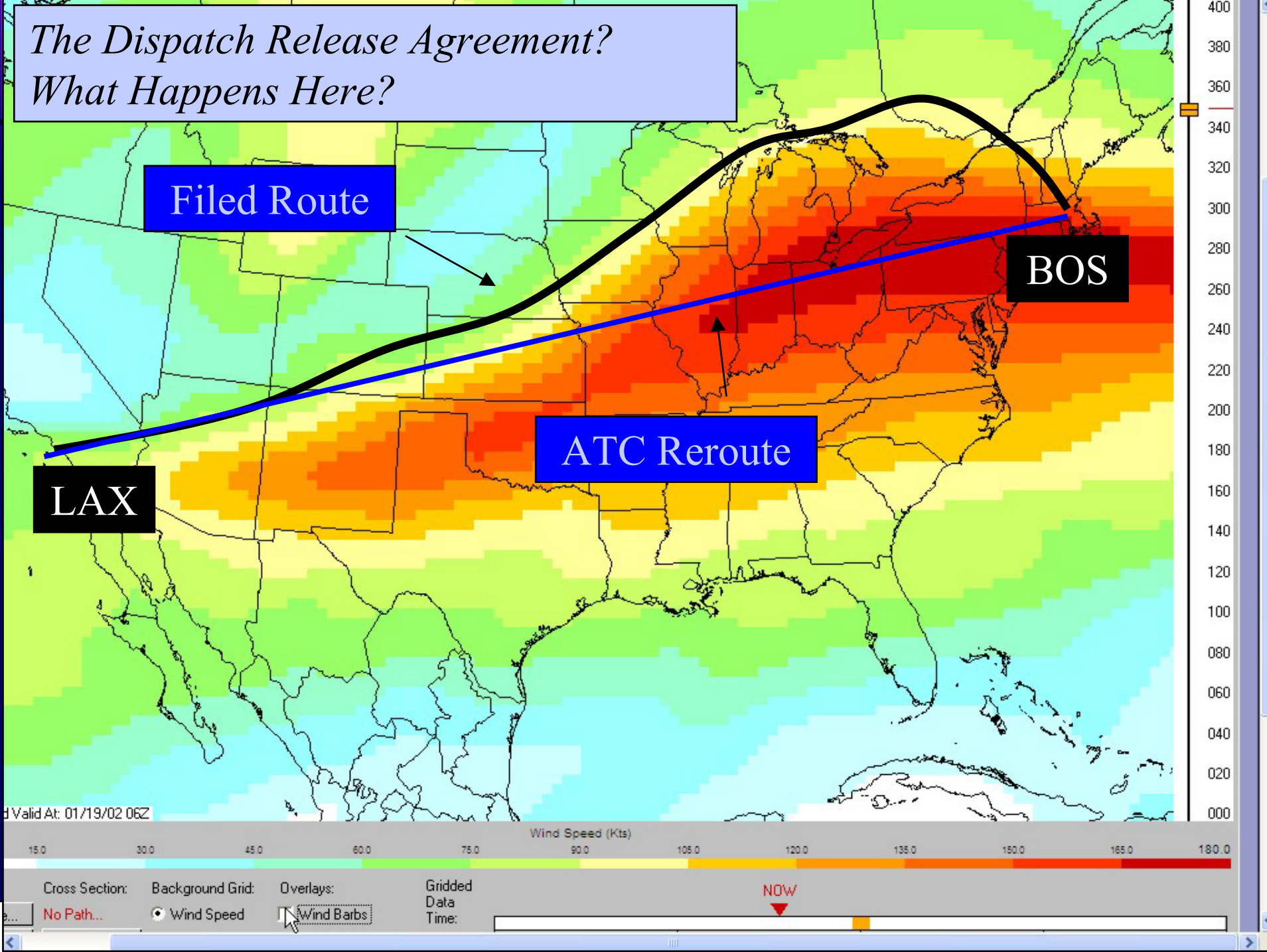
# *The Dispatch Release*



## ● Agreement On:

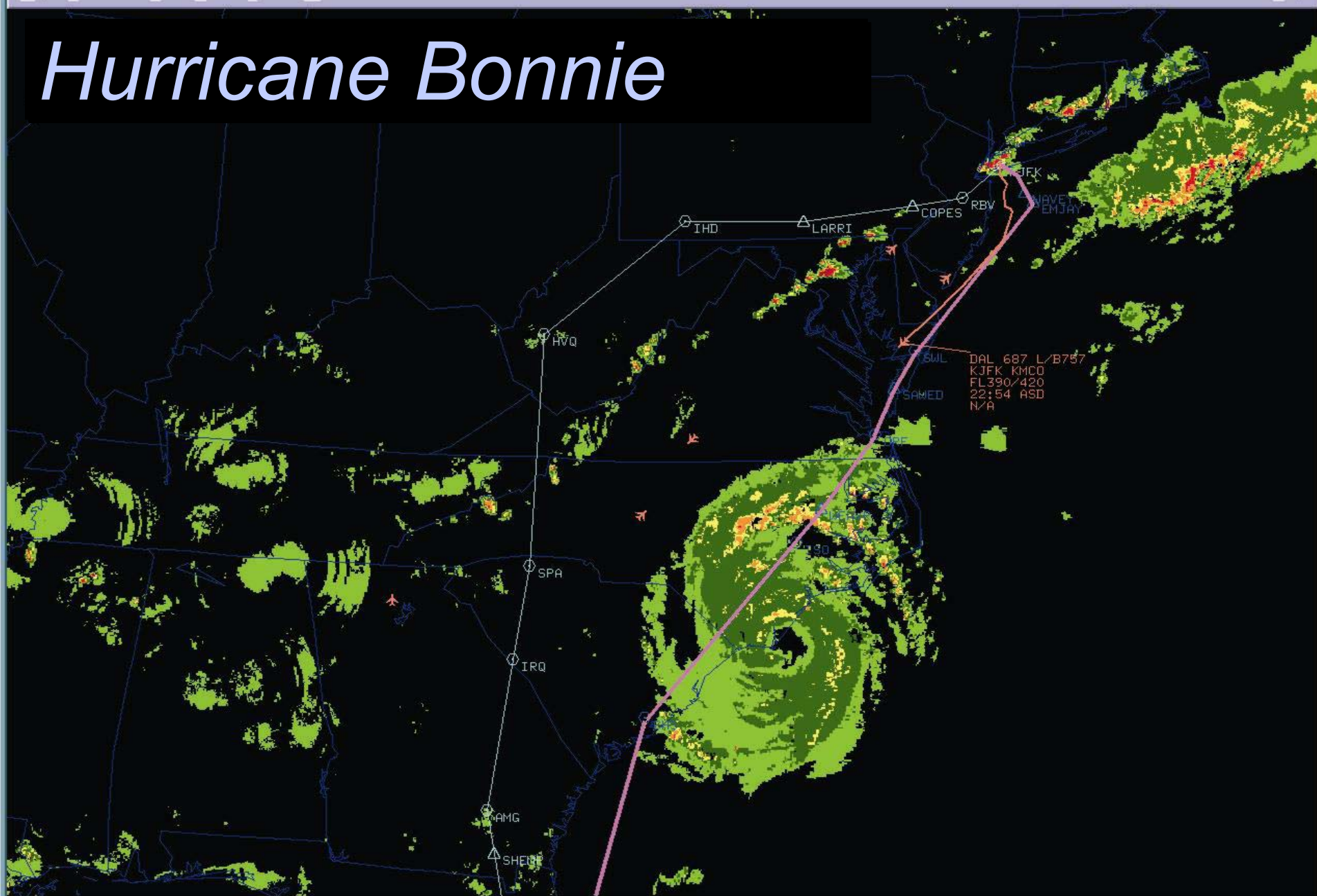
- Fuel Required
- Route
- Drift down
- Aircraft Performance
- Enroute Weather
- Mechanical Condition of Aircraft
- Arrival Fuel
- Hold Time
- Alternate Airport

# *The Dispatch Release Agreement? What Happens Here?*





# Hurricane Bonnie



# Extensive ATC SWAP Reroute

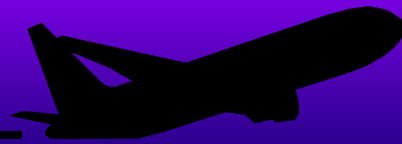
## Filed Route

This ATC reroute was issued to this flight just prior to departure. It added 4 and 1/4 hours of flying time to the flight plan. The aircraft had insufficient fuel for this route. Shortly after takeoff, the aircraft was returned to its filed routing.

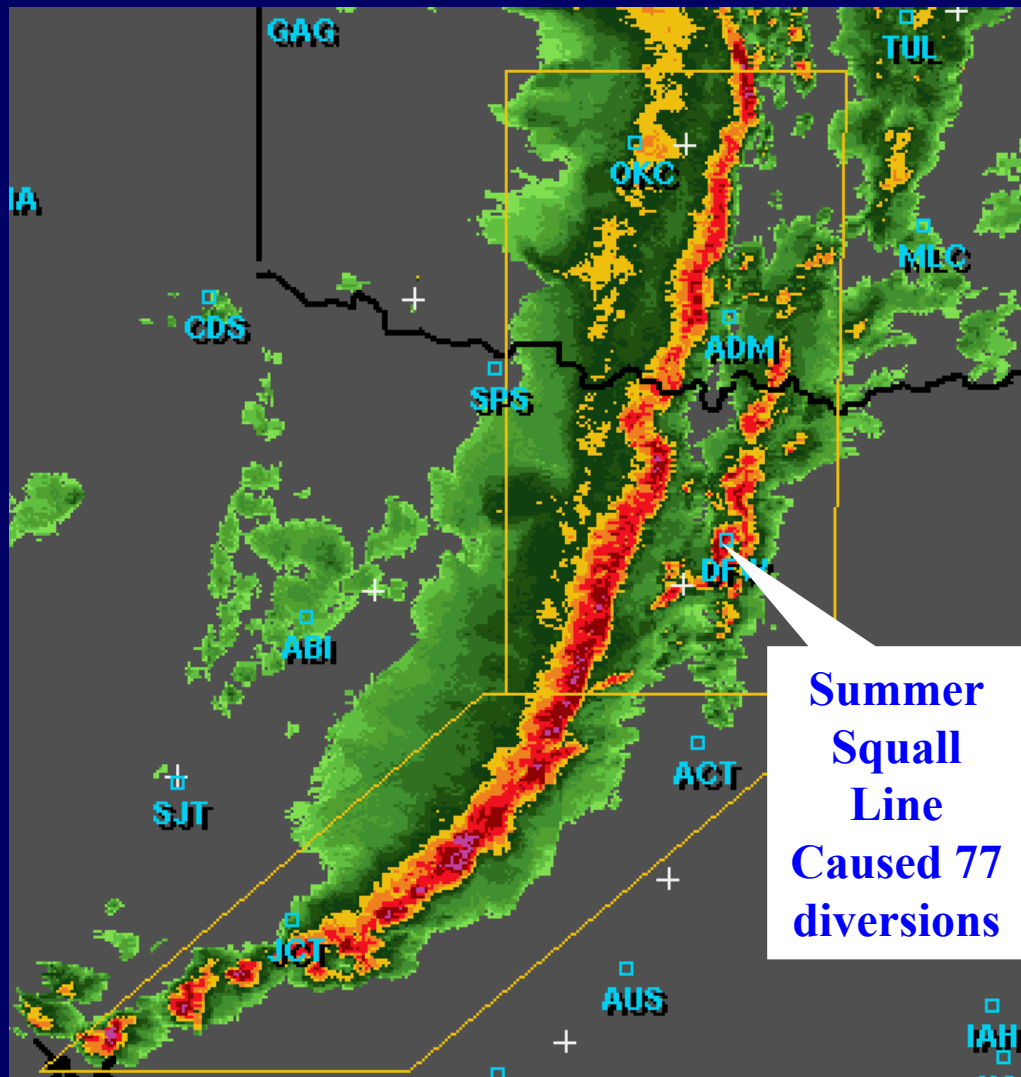
## ATC SWAP Route

783 L  
KJFK KPDx

# Thunderstorms



- Thunderstorms are the single most significant weather concern for dispatchers. They cause more disruption to the dispatcher's world than any other factor.
- Thunderstorms are also the most dangerous aviation weather hazard.
- Dispatchers go to great lengths to file aircraft away from thunderstorms



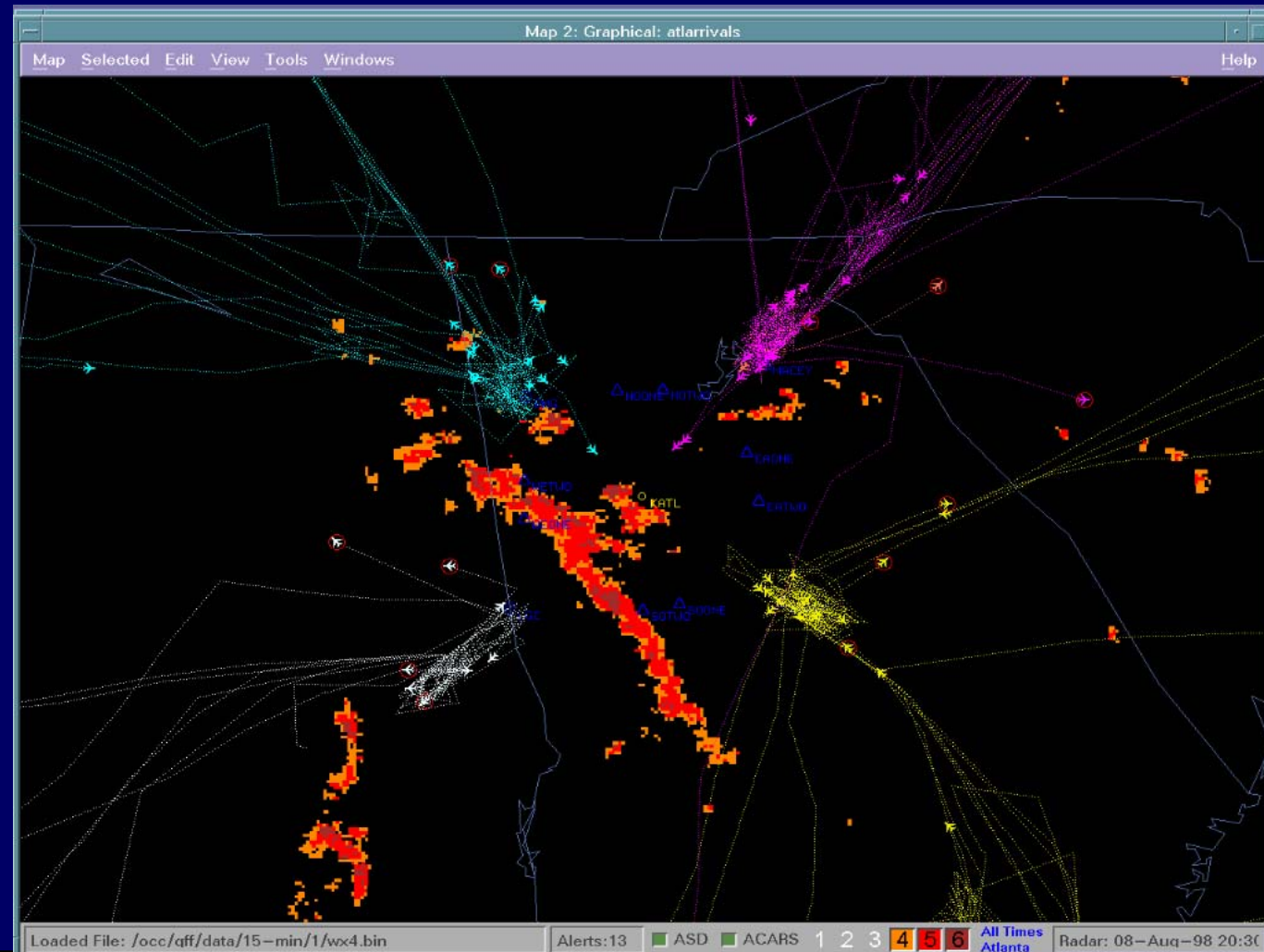
**Summer  
Squall  
Line  
Caused 77  
diversions**

# *Holding and Diversions*



## CONSIDERATIONS

- Hold Fuel
- Alternate Weather
- Position of TSTMS
- Airport Capabilities
- Passengers
- Mechanical Issues
- Staffing
- Return to Destination
- ATC Issues



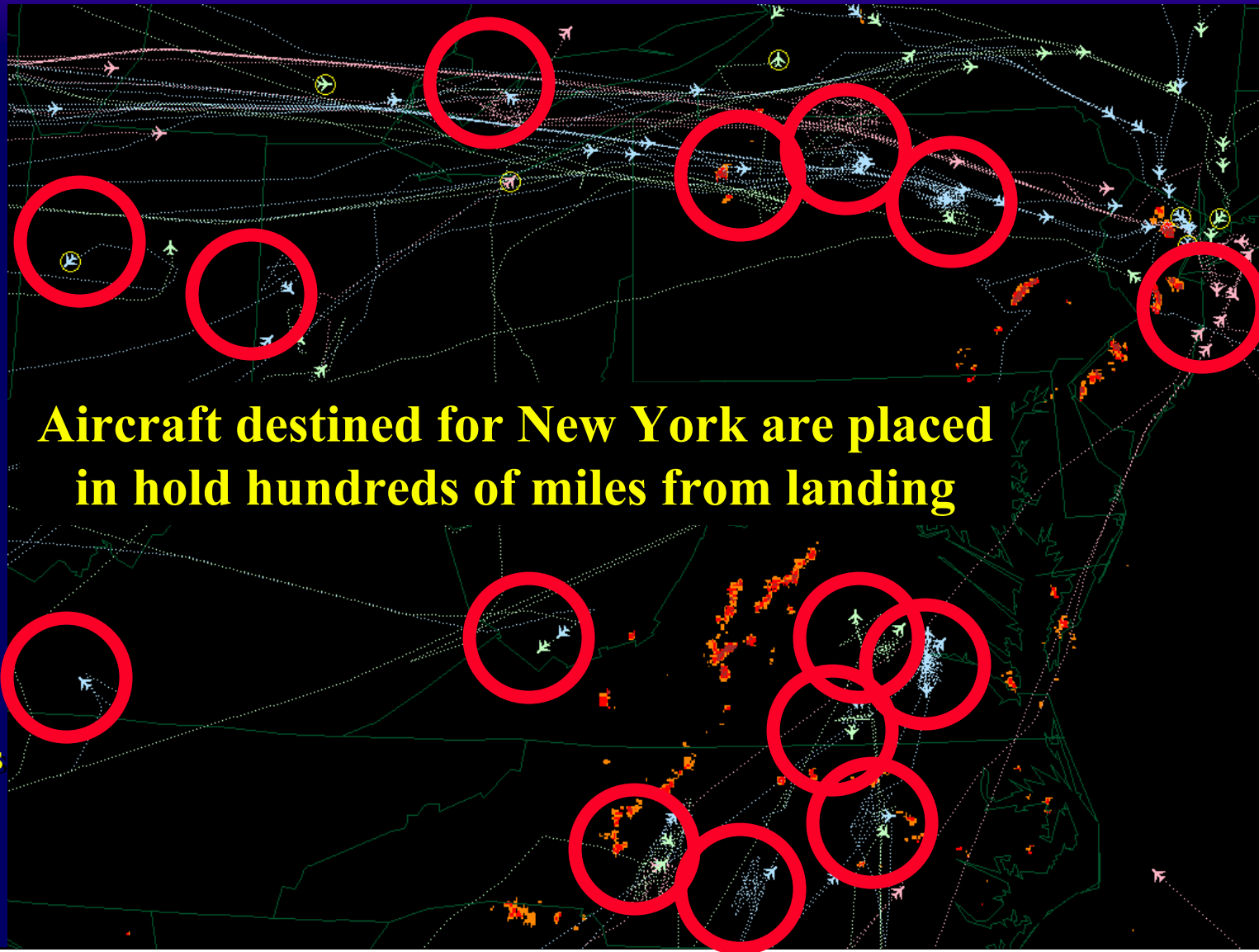


# Air Traffic Control Issues



## Considerations

- Fuel
- Alternate
- Crews
- Aircraft
- PAX
- MTC
- Sector Saturation
- Closed Routes
- Acceptance Rates
- SWAP Routes
- Pathfinders



**Aircraft destined for New York are placed  
in hold hundreds of miles from landing**



# Automation Issues



Lexington observed weather at 0254Z was:

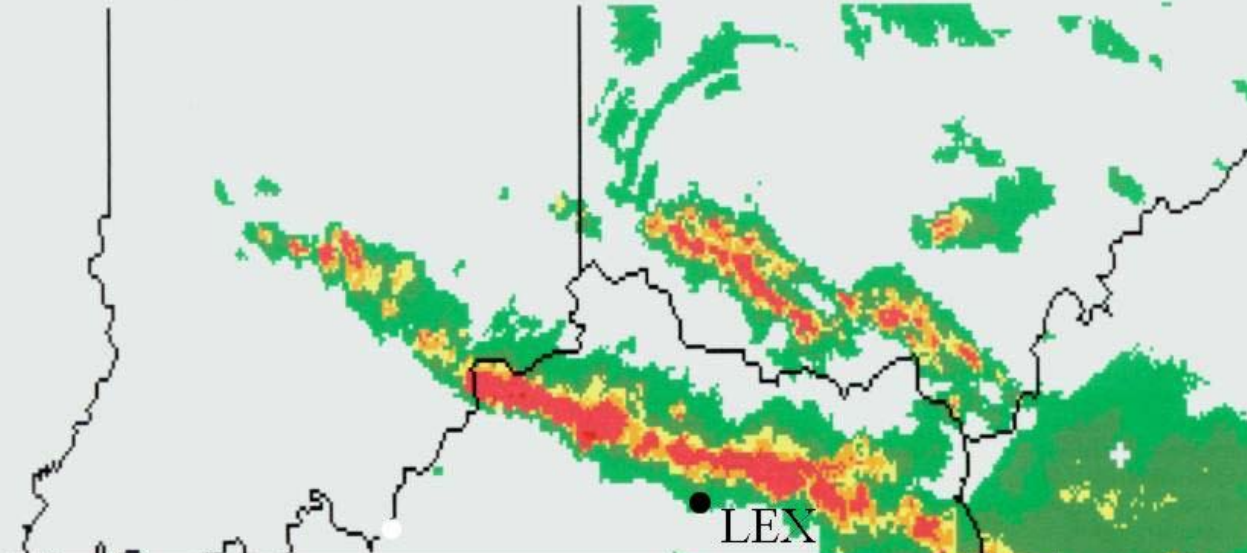
SKY CLEAR

VISIBILITY 7  
MILES

## • Diversion War Story

Automated weather  
show clear skies when  
severe line of TSTMS  
was just 10 north of  
airport.

WSI REGRAD LEX+ 02:45 (02)GMT 11-JUL-00



```
KLEX 110554Z 36004KT 6SM TSRA BR FEW028 BKN034 OVC045 21/21 A2996
RMK AO2 SLP137 P0005 60016 T02110206 10300 20206 50011=
KLEX 110454Z 11004KT 10SM TSRA OVC050 21/20 A2998 RMK AO2 SLP143
P0004 T02110200 403220206=
KLEX 110354Z 32009G19KT 5SM TSRA BR BKN041 BKN050 OVC070
21/19 A3000 RMK AO2 TSB39RAB22 PRESRR SLP151 P0007
T02110194
KLEX 110345Z 34017G24KT 6SM TSRA FEW030 BKN044 OVC070 22/19
A3000 RMK AO2 TSB39RAB22 PRESRR P0004 (SPECI)
KLEX 110354Z 32009G19KT 5SM TSRA BR BKN041 BKN050 OVC070 21/19
A3000 RMK AO2 TSB39RAB22 PRESRR SLP151 P0007 T02110194=
KLEX 110345Z 34017G24KT 6SM TSRA FEW030 BKN044 OVC070 22/19 A3000
RMK AO2 TSB39RAB22 PRESRR P0004= (SPECI)
KLEX 110254Z 25006KT 7SM CLR 28/23 A2992 RMK AO2 PRESRR SLP124
T02780233 53004=
KLEX 110154Z 22008KT 8SM CLR 28/23 A2989 RMK AO2 SLP112
T02830228=
```

# *Airline Dispatchers Federation*



- Professional, All Volunteer Organization

- Non-labor,

- Strong, Ardent, Avoidance of any labor related issues

- Mission Statement

- "To foster a global understanding of the nature and benefits of Positive Operational Control"

- Organizational Goal

- "To advance aviation safety and efficiency by enhancing the professional standards of individual Dispatchers and the organizations within which they exercise Operational Control"



# *Something to Ponder*

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- Higher quality, more accurate and thorough strategic planning in the pre-flight phase of an operation can reduce the number of tactically required changes once a flight becomes airborne.

# *Thank You for your Interest in the Dispatch Profession*



Please contact us if  
you would like to  
spend more time  
with an aircraft  
dispatcher.

